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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/883,241 | 06/19/2001 | Mario Martinelli | 05788.0173 | 9552 |

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| EXAMINER | |
|---|---|
| MOONEY, MICHAEL P | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2877 | |

DATE MAILED: 12/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/883,241 | MARTINELLI ET AL. | |
| | Examiner | Art Unit | |
| | Michael P. Mooney | 2877 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,7 and 9-17* is/are rejected.

7)☒ Claim(s) *2,6 and 8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1, 3-5, 7, 9, 13-17 are rejected under 35 U.S.C. 102b as being anticipated by Masaru et al. (JP 08248358A).**

Masaru et al. teaches a polarization stabilizing device including: an input light path for receiving a light signal having an arbitrary polarization state; a divider arranged in the input light path to split the light signal into first and second components; a first interferometric arm arranged to receive from the divider the first component of the light signal; a second interferometric arm arranged to receive from the divider the second component of the light signal; an output path for outputting the light signal from the first and second interferometric arms; at least one polarizer arranged either in the first and second interferometric arms, or in the output path, to define an output polarization state for the light signal; and at least one retarder arranged in at least one of the first and second interferometric arms to generate first and second polarization states in the first and second interferometric arms, respectively, that are orthogonal to each other for at least one polarization state of the input light signal so that the first polarization state is transmitted by the at least one polarizer and the second polarization state is absorbed

by the at least one polarizer, thereby to output the light signal in the output polarization state defined by the at least one polarizer. (See: Abstract).

Thus claim 1 is met.

Masaru et al. teaches a device according to claim 1, further comprising a combiner arranged to combine the first and second components of the light signal into the output path. (See: Abstract). Thus claim 3 is met.

Masaru et al. teaches a device according to claim 1, wherein the at least one polarizer comprises a polarizing element placed in the output path. (See: Abstract). Thus claim 4 is met.

Masaru et al. teaches a device according to claim 1, wherein the at least one polarizer comprises a polarizing element placed in the first and second interferometric arms. (See: Abstract). Thus claim 5 is met.

Masaru et al. teaches a device according to claim 1, wherein the at least one retarder comprises a retarding element arranged in the first interferometric arm. (See: Abstract). Thus claim 7 is met.

Masaru et al. teaches an optical component comprising: an optical device having an input for receiving an input light signal, the optical device being sensitive to the polarization state of its input signal; and a polarization stabilizing device according to claim 1 arranged to stabilize the polarization state of the input signal prior to supply to the input of the optical device. (See: Abstract). Thus claim 9 is met.

Masaru et al. teaches an optical network comprising at least one polarization stabilizing device according to claim 1. (See: Abstract). Thus claim 13 is met.

Masaru et al. teaches a method of polarization stabilization, comprising: inputting a light signal into an interferometer arrangement comprising first and second arms having an optical path difference therebetween greater than the coherence length of the light signal; applying a retardation to the light signal in at least one of the arms so that subsequent to the retardation the light signal has orthogonal polarization states in the first and second arms for at least one polarization state of the input light signal; and applying a polarization with a polarizer so that one of the orthogonal polarization states is absorbed while the other is transmitted. (See: Abstract). Thus claim 14 is met.

Masaru et al. teaches a method according to claim 14, wherein the polarization is applied in the first and second arms. (See: Abstract). Thus claim 15 is met.

Masaru et al. teaches a method according to claim 14, wherein the polarization is applied subsequent to recombination of the light signal after the first and second arms. (See: Abstract). Thus claim 16 is met.

Masaru et al. teaches a method according to claim 14, further comprising recombining the light signal after the first and second arms in a manner that is insensitive to the polarization state of the light signal input to the interferometer arrangement. (See: Abstract). Thus claim 17 is met.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaru et al. (JP 08248358A).**

Masaru et al. teaches a polarization stabilizing device including: an input light path for receiving a light signal having an arbitrary polarization state; a divider arranged in the input light path to split the light signal into first and second components; a first interferometric arm arranged to receive from the divider the first component of the light signal; a second interferometric arm arranged to receive from the divider the second component of the light signal; an output path for outputting the light signal from the first and second interferometric arms; at least one polarizer arranged either in the first and second interferometric arms, or in the output path, to define an output polarization state for the light signal; and at least one retarder arranged in at least one of the first and

second interferometric arms to generate first and second polarization states in the first and second interferometric arms, respectively, that are orthogonal to each other for at least one polarization state of the input light signal so that the first polarization state is transmitted by the at least one polarizer and the second polarization state is absorbed by the at least one polarizer, thereby to output the light signal in the output polarization state defined by the at least one polarizer. (See: Abstract).

Masaru et al. teaches an optical component comprising: an optical device having an input for receiving an input light signal, the optical device being sensitive to the polarization state of its input signal; and a polarization stabilizing device according to claim 1 arranged to stabilize the polarization state of the input signal prior to supply to the input of the optical device. (See: Abstract).

Although Masaru et al. does not necessarily use the precise nomenclature expressed in claims 10-12, it would have been obvious to do so because it is notoriously well known to use each of these variations in such applications. Thus claims 10-12 are rejected.

***Allowable Subject Matter***

Claims 2, 6, 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Mooney whose telephone number is 703-308-6125. The examiner can normally be reached during weekdays, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 703-308-4881. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956. An alternative useful number for status inquiries is 703-306-3329.

Michael P. Mooney
Examiner
Art Unit 2877

FGF/mpm
12/27/03

Frank G. Font
Supervisory Patent Examiner
Art Unit 2877

for

Michael P. Stafira
Primary Patent Examiner
Technology Center 2800